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THE ASH-GRAY HARVEST-SPIDER.

By Clarence M. Weed, D. Sc.

The Ash-gray Harvest-spider (*Phalangium cinereum* Wood) occurs over a large portion of the northern United States, and is the species most commonly found about sheds and outbuildings. It is the only one of the harvest-spiders described by Say and Wood that is still retained in the genus Phalangium.

LITERATURE.

This species, like many others of the family, was first described in Dr. Wood's paper published in 1868 in the Communications of the Essex Institute (vol. vi, pp. 25–26, 39; fig. 5), under the name by which it is yet known. The author had received a large number of specimens collected in northern New York.

Aside from a bibliographical reference by Professor Underwood, occurring in the *Canadian Entomologist* in 1885 (vol. xvii, p. 168), no notice of the species appears in our literature until October, 1887, when the present writer called attention, in the American Naturalist (vol. xxi, p. 935), to the fact that this species comes properly in the genus Phalangium as restricted by Simon. Two years later I again treated of the species in my Descriptive Catalogue of the Phalangiinæ of Illinois (*Bull. Ill. St. Lab. Nat. Hist.* vol. iii, pp. 93–94), publishing extended descriptions from specimens collected in Central Illinois and Southern Michigan. It was also briefly mentioned in my paper on the Harvest-spiders of North America in the American Naturalist for October, 1890 (vol. xxiv, p. 916), where it is said to occur in the northern states from New York to Nebraska.

LIFE-HISTORY.

The Ash-gray Harvest-spider passes the winter in the egg state. A few years ago in Illinois I found a bunch of about a dozen small, white, spherical eggs, slightly beneath the soil surface, which were transferred to breeding cages. During the spring they hatched into small, gray phalangids which were

PLATE I.

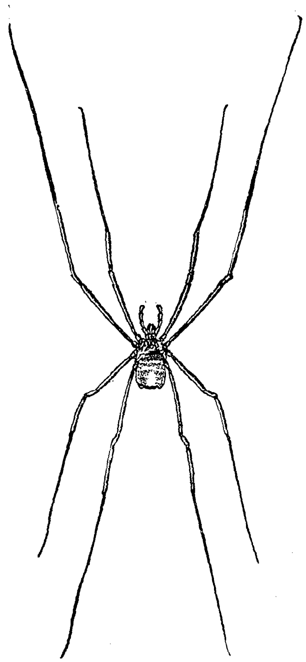

Fig. 1

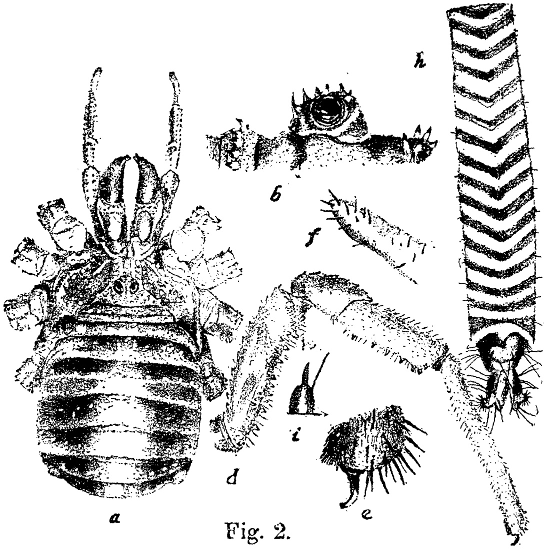

Fig. 2.

Phalangium cinereum Wood.

believed to belong to the present species. I have never seen the female engaged in oviposition, but the structure of the ovipositor (Fig. 2, h) indicates that the eggs are deposited in the ground, about half an inch below the surface. In the latitude of central Ohio there are apparently two broods each season, the first maturing late in June or early in July, and the second, which is much the more numerous in individuals, in September.

This species is preeminently what may be called an in-door species. It abounds especially in sheds, out-houses and neglected board piles, being rarely found, so far as my experience goes, in the open field. Its color especially fits it for crawling over weather-beaten boards, making it inconspicuous against such a back-ground. During the day it is usually quiet, but at dusk, and on cloudy days, it moves about quite rapidly. It probably feeds upon small flies and other insects that it finds during its nocturnal rambles. The only natural enemies that I have seen it suffering from are the web-making spiders, in the webs of which it often perishes, often getting its long legs inextricably entangled.

DESCRIPTION.

The following descriptions have been drawn up from a long series of specimens collected over a wide range of territory.

MALE (Fig. 1; Fig. 2, *a*, *b*, *d*, *e*)—Body, 5–6·8 mm. long; 3–4 mm. wide. Palpi, 4 mm. long. Legs, I, 23–33 mm.; II, 44–52 mm.; III, 24–33 mm.; IV, 31–42 mm.

Dorsum ash-gray, with a slightly darker, sub-obsolete, wide, vase-shaped, central marking; in some specimens entirely obsolete; with transverse series of small spinose tubercles behind the eye-eminence, one row on posterior border of cephalothorax, and one on each abdominal segment except last two, and a curved series in front of eye-eminence. These tubercles (Fig. 2, *h*) have whitish bases, and acute black apices, and also generally have a spinose hair arising on one side near the apex of the white portion, and reaching beyond the tip of the tubercle. In front of the eye eminence there are two longitudinal series of these tubercles of three each. Lateral borders of cephalothorax, subsinuate. Eye-eminence low, canaliculate, with a series of five or six tubercles like those on the dorsum surmounting each eye. Mandibles brownish-white, tips of claws black; second joint and apical portion of first joint furnished with short, black, stiff hairs. Palpi light brown, rather slender, first four joints with minute tubercles and short black hairs: none of the angles prolonged; tarsal joint without tubercles, but with hairs; claw moderately robust. Venter including coxæ, light grayish-brown, with many somewhat quadrangular patches of a more pronounced brown, and scattered blotches of chocolate brown. Trochanters light brown, with many small tubercles. Remaining joints of legs cinnamon brown, more or less annulated with deeper and lighter shades; angular with longitudinal rows of black spines. Sheath of genital organ subcylindrical, truncate; shaft robust, with two lateral, oval openings near distal extremity, then contracted into a blunt scoop-shaped piece, turned upward at nearly a right angle, and terminating with a slender acute point.

FEMALE (Fig. 2, *g*, *i*).—Body, 6–9 mm. long; 4–5 mm. wide. Palpi 4 mm. long. Legs: I, 21–29 mm.; II, 39–52 mm.; III, 22–29 mm.; IV, 30–37 mm.

Differs from the male as follows: Body larger, rounder. Dorsum darker gray, more mottled; central marking more distinct. Tubercles on dorsum smaller; those on eye-eminence more numerous, and those forming the longitudinal series in front of the eye-eminence also more numerous. Palpi with hairs but without tubercles. Legs with annulations more distinct; trochanters without tubercles; spines on femur less prominent and on tibia obsolete. Narrow quadrangular brown patches on venter of abdomen arranged in transverse series. Distal joints of ovipositor blackish; about thirty in number.

VARIATION.

Like most members of its family the Ash-gray Harvest-spider varies greatly in the size of its body and the length of its legs. To determine the extent of this variation, I collected at Columbus, Ohio, about the middle of September, 1889, a large number of adult specimens of both sexes, which were carefully measured by my assistant, Miss Freda Detmers. The results are shown in the tables on pages 35 and 36.

These tables show a remarkable amount of variation on both sides of the line of average. It will be noted that the difference between the greatest and least measurements averages about one-third the entire length of the latter in both sexes; and that only two cases occur in each table where the leg measurements are identical, viz: Nos. 5 and 13, and 7 and 25 in Table I; and 16 and 20, and 23 and 25 in Table II. These facts indicate how readily this family of long-legged spiders could have been developed from allied forms with shorter legs.

DISTRIBUTION.

Dr. Wood states that this species was found abundantly in northern New York. Specimens in my collection represent the following counties of the states named:

ILLINOIS: Champaign.
IOWA: Story (C. P. Gillette).

MAINE: Penobscot (F. L. Harvey).

MICHIGAN: Ingham (H. E. Weed).

NEBRASKA: Lancaster (Lawrence Bruner).

NEW YORK: Tompkins (J. H. Comstock: N. Banks).

OHIO: Butler, 1 September, 1890; Delaware, 18 September, 1890; Erie, 5 July, 1890; Franklin, 4 October, 1890; 18, 20, 21 September, 1889; 18 October, 1889; Lawrence, July, 1889; Madison, 21 July, 1890.

SOUTH DAKOTA: Brookings (J. M. Aldrich).

Variation of Phalangium cinereum. Table I. Male.

No. of Specimens	Length of Body.	Length of Legs.				Remarks.
		First Pair.	Second Pair.	Third Pair.	Fourth Pair.	
	mm.	mm.	mm.	mm.	mm.	
1		27	49	26	31	Body not meas'd.
2		26	49	27	36	" " "
3		29	51	29	39	" " "
4		31	55	32	40	" " "
5		30	54	30	39	" " "
6		23	44	24	32	" " "
7		29	54	30	39	" " "
8		27	49	27	36	" " "
9		30	54	30	40	" " "
10		26	47	26	35	" " "
11		33	59	33	42	" " "
12		25	46	26	34	" " "
13		30	54	30	39	" " "
14		28	49	27	36	" " "
15		29	54	29	38	" " "
16		32	57	32	41	" " "
17		25	47	25	34	" " "
18		31	55	31	40	" " "
19		29	53	29	40	" " "
20	5·8	28	51	28	36	
21	6·8	31	56	31	41	
22	5·2	27	50	28	37	
23	5·	27	49	28	37	
24	5·4	27	48	27	36	
25	6·2	29	54	30	39	
26	6·	29	55	30	41	
27	5·	27	50	27	37	
Average.	5·6	28	52	29	37	
Shortest.	5·	23	44	24	31	
Longest.	6·8	33	59	33	42	
Difference	1·8	10	11	9	11	

Variation of Phalangium cinereum. Table II. Female.

No. of Specimens	Length of Body.	Length of Legs.				Remarks.
		First Pair	Second Pair.	Third Pair.	Fourth Pair.	
		mm.	mm.	mm.	mm.	
1	5·9	24	44	24	34	
2	7·	23	44	24	34	
3	7·	24	47	25	36	
4	7·2	22	43	24	33	
5	7·4	22	45	23	34	
6	9·4	24	46	25	34	
7		22	42	22	31	Body not meas'd.
8		29	52	29	38	" " "
9		21	43	22	32	" " "
10		25	47	26	35	" " "
11		25	46	25	34	" " "
12		24	47	26	35	" " "
13		22	43	23	32	" " "
14		24	45	25	35	" " "
15		24	48	26	35	" " "
16		22	42	23	32	" " "
17		24	48	25	36	" " "
18		22	41	22	33	" " "
19		23	44	24	34	" " "
20		22	42	23	32	" " "
21		21	39	22	30	" " "
22		26	49	27	37	" " "
23		23	43	23	33	" " "
24		23	40	23	31	" " "
25		23	43	23	33	" " "
Average.	7·3	23	45	24	33	
Shortest.	5·9	21	39	22	30	
Longest.	9·4	29	52	29	37	
Difference	3·5	8	13	7	7	

EXPLANATION OF PLATES.

Fig. 1.—*Phalangium cinereum*, male natural size. (Original F. Detmers, *del.*)

Fig. 2.—*Phalangium cinereum*, structural details: *a*, body of male, back view; *b*, eye eminence of male, side view; *d*, palpus of male, side view; *e*, claw of palpus of male, side view; *f*, maxillary lobe of second legs, of female; *h*, apical joints of ovipositor; *i*, dorsal tubercle of male—all magnified. (Original, F. Detmers, *del.*)